

Appl. No. 09/994,091  
December 5, 2005  
Reply to Office action of September 20, 2005

### **REMARKS**

Claims 14, 16-19, 20 and 21 are pending. Claims 1-13, and 15 have been canceled. Claims 14, 16 and 20 have been amended. No new matter has been introduced by these amendments as they pertain to corrections of typographical errors and the redirecting of dependent claims due to claims being canceled.

In the above-identified Final Office Action, the Examiner rejected all Claims, 1-21, under 35 U.S.C. §103(a) for being obvious to one of ordinary skill in the art. Applicant has carefully reviewed all of the Examiner's comments and requests reconsideration upon review of these remarks.

Claims 10-21 stand rejected under U.S.C. 103(a) as obvious over Guth et al. (US Patent 5,599,758 hereafter Guth '758) in view of Wintrell (US Patent 4,153,426) and Courty et al. (US Patent 4,088,736) and further in view of Debbage et al. (US Patent 5,762,885).

The USPTO maintains that it would have been obvious to one skilled in the art at the time of the invention to use a synthesis gas (syngas), from the gasification process as taught by Wintrell, as the regeneration gas as taught by Guth '758. The Examiner credits Guth '758 with the idea of using a syngas for a regeneration gas (Final Office Action Page 7). However, Guth '758 does not disclose syngas at all. Guth '758 is very clear that the preferred reactants gases are carbon monoxide *or* hydrogen *or* combinations of carbon monoxide and hydrogen. While syngas contains both carbon monoxide *and* hydrogen it is but one of many possible sources of gas containing carbon monoxide *or* hydrogen. There is no specific teaching in Guth '758 of a syngas. With other sources for hydrogen, such as; natural gas, methane and electrolysis of water, and other sources of carbon monoxide, such as; combustion of any hydrocarbon, the choice of syngas as a source for a regeneration gas is not a likely choice nor is it likely that one of ordinary skill in the art would even think of syngas as a source for the Guth '758 process. Syngas is commonly known to be dirty gas by those of skill in the art so why would one even think of it for a cleaning process. This is especially so when the syngas is precisely what sullied the

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catalyst/absorber to begin with. When a regeneration gas is to be used to regenerate a catalyst/absorber that has become deactivated due to saturation with contaminants from combustion of a syngas, the use of that very same syngas to regenerate the catalyst/absorber is counter intuitive at best. It certainly is not something that readily comes to mind. One of ordinary skill in the art would be hard pressed to consider the very same syngas as a regeneration (cleaning) gas based upon the prior art and without the benefit of applicant's disclosure to lead the way. As is well known, employing applicant's disclosure as a guide to build combinations of prior art documents as a mosaic is impermissible.

Further investigation finds that the inventors of the regeneration process of Guth '758, namely, Eugene D. Guth and Larry E. Campbell, not only do not disclose the use of syngas as a regeneration gas, but even they have failed to identify a syngas as a source. Evidence supporting this statement is found in a later patent by Eugene D. Guth, Larry E. Campbell and Gregory H. Wagner, specifically Guth et al. (US Patent 5,953,911 here after Guth '911). Guth '911 builds on Guth '758, by disclosing that a source of carbon monoxide for use as a regeneration gas may be supplied by hydrocarbon gases, to wit:

The reactant gas reduces the nitrogen oxides to eliminate nitrogen and displaces the sulfur oxide. The apparent stoichiometry is two moles of carbon monoxide and/or hydrogen for each mole of nitrogen oxide on the catalyst/absorber and one mole of reactant gas for each mole of sulfur oxide on the catalyst/absorber. Thus, when *hydrocarbon is the source of CO* the molar amount of CO produced under the regeneration conditions for hydrocarbon or mixture of hydrocarbons used may be determined and the amount of hydrocarbon in the regeneration stream adjusted accordingly. Preferred hydrocarbons are C<sub>1</sub> - C<sub>12</sub> hydrocarbons, for example methane, propane, propylene, cyclohexane, cyclohexene, dodecene, toluene, benzene and the like. The regeneration gas may comprise a single compound or mixture of compounds and may include any one or mixture of alkane, alkene, and aromatics. The alkenes and alkanes may be cyclic or alicyclic and the aromatics may have one or more rings or substituent hydrocarbon groups. *The preferred source of methane is natural gas.* (Col. 3, lines 33-51).

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Applicant respectfully submits that if the inventors of the regeneration process itself, namely, Guth and Campbell, who were considered knowledgeable in the art at the time of the invention, did not contemplate syngas as a possible source for their regeneration gas, why then would someone else, even less knowledgeable than they about the regeneration process and potential sources. Further, even if one were, *pro arguendo*, to for reasons not clear to applicant decide to use the same gas that caused the need for regeneration as a regeneration gas, they would quickly discover that their interests would not benefit. This of course would lead to abandonment of the attempt rather than perseverance.

It has not been known to the art to do that which is claimed in the present application prior to disclosure thereof by the inventor hereof. Applicants therefore respectfully request reconsideration and allowance of the application as amended.

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**Conclusion**

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. Accordingly, it is respectfully requested that this application be allowed and a Notice of Allowance issued. If the Examiner believes that a telephone conference with Applicant's attorneys would be advantageous to the disposition of this case, the Examiner is cordially requested to telephone the undersigned.

In the event the Commissioner of Patents and Trademarks deems additional fees to be due in connection with this application, Applicant's attorney hereby authorizes that such fee be charged to Deposit Account No. 06-1130.

Respectfully submitted,

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